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Importance of Millets and Its Production in India

R. Nagasai Vardhan Naik*
*Ph.D Scholar, Department of Agronomy, (Naini Agricultural Institute), Sam Higginbottom University of Agriculture Technology and Sciences, Prayagraj, Pin code: 211007, U.P, India

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Abstract

Millets are one of the ancient crops in the world. These are the small-seeded crops which can grow well in dry zones under marginal conditions of soil fertility and moisture conditions. Millets are cultivated in low-fertile soils, tribal and rain-fed areas. India is the largest producer of millets as of 2021, with a total share of 41%, followed by Nigeria 12% and China 8%. India also ranks 12th among those countries that produce high yields of millets. The areas where millets grown are Haryana, Uttar Pradesh, Chhattisgarh, Gujarat, Rajasthan, Madhya Pradesh, Maharashtra, Andhra Pradesh, Karnataka, Tamil Nadu and Telangana. The three major millet crops currently growing in India are jowar (sorghum), bajra (pearl millet) and ragi (finger millet). kodo (kodo millet), kutki (little millet) are also cultivated in some regions of India. Millets are one of the best options to found highly nutritious and having health benefits in pandemic era. Researchers are proving that millets have a better option to replace cereal crops. As millets contains proteins, vitamins and minerals. Millets can grow in poor climatic or in different problematic soil conditions and provide nutritious grain as well as fodder, but these can also very well fit into multiple cropping systems under irrigation as well as dryland farming due to their short growing season. The millets can be stored for longer period and easily stored under ordinary conditions has given them the status of Famine Reserves.

Key words: Millets, Dryland farming, soil conditions, multiple cropping and Famine Reserves.

Introduction

Millets have been an integral part of our diet for centuries. They offer a plethora of health benefits and are also good for the environment with low water & input requirements for production. Sharp decline in area of millets after green revolution. During 1952-54, millets constituted 20% national food grain production; declined to 6% during 2015-16. Highest decline of area in small millets (89%) followed by sorghum (68%) and finger millet (37%),

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with least decline in pearl millet (20%). Pearl millet has occupied first position among millets in India. Despite surrendering 56% area, production has increased from 11.3 to 16.3 million tons. This increase was possible due to increase in yield that went up by more than two times overall; with more than tripling in pearl millet. Development and adoption of improved hybrids and varieties have played a significant role.

Change in area, production and yield of millets from 1950-51 to 2017-18

Millet Crop	Area Decline %	Production Decline/Increase	Yield Increase %
Sorghum	68	-15	166
Pearl millet	20	+256	345
Finger millet	48	+37	163
Small millets	89	+76	118
Total millets	56	+45	228

Importance

Millets are a group of nutritiously rich, drought tolerant and mostly grown in the arid and semi-arid regions of India. They are small-seeded grasses belonging to Poaceae. They constitute an important source of food and fodder for millions of resource-poor farmers and play a vital role in ecological and economic security of India. These millets are also known as "coarse cereals" or "cereals of the poor". Millets are nutritionally superior to rice and wheat as they are rich in proteins, vitamins and minerals. They are also gluten-free and have a low glycemic index, making them ideal for people with celiac disease or diabetes. In millets, seed plays a critical role in increasing agricultural productivity. It is recognized to be cheapest, yet most critical single input. Improved variety seeds increase the yield from 15-20%. Improved production technologies along with improved varieties and hybrids enhance the productivity by 30-40% ha^{-1} and fodder productivity by 20-35% ha^{-1}.

Nutritional Importance of Millets:

Millets are the storehouse of nutrition and they are known as Nutri-Cereals. Millets are unique in terms of nutrients and health benefits. So, millets are highly nutritious. Pearl Millet contains the highest iron content. It is about 4-8 mg per 100 gm of grain and has the ability to tackle anemia. It is also rich in Zn and Folic acid and is recommended for pregnant women.

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Pearl Millet contains two times more protein than milk. The recent systematic review and Meta-analysis of millets have given us enough evidence of the potential of millets for managing and reducing diabetes. The low glycemic index of millets is helping to manage diabetes. Finger Millet known as Ragi has the highest Calcium content of about 364 mg per 100 gm of grains. It is three times more Calcium than milk. This Calcium dense grain keeps the bones and teeth strong. A recent study showed that millets can reduce the risk of developing cardio-vascular diseases. Millets help in weight loss. The specific content of millets like dietary fiber and Tryptophan helps in weight loss.

Importance of millets in the context of Climate Change:

In rice cultivation the production is affected by increase in temperature are predicted to reduce rice yields. So, there is a need to consider adaptive measures to cope with changing cropping patterns. Due to climate change, there is a decline in yield leading to food insecurity, more attacks of pests and diseases, soil degradation, change in crop schedules and desertification. Considering, millets as an alternative crop is a better choice and we can say it is the future crop.

Economic Importance of Millets:

India is the largest producer of millets in the globe and the fifth largest exporter of millets. Its exports are increasing exponentially as the demand for millets is increasing. Millets are addressing the need for fuel and seed production. It has the potential to produce bio-fuel. As the demand for millets is increasing, it is creating more business opportunities for entrepreneurs. World export of millets has increased from $400 million in 2020 to $470 million in 2021 (ITC trade map) India exported millets worth $75.46 million in the year 2022-23, against $62.95 million in 2021-22. India is the largest producer as well as the largest exporter of cereal products in the world. India's export of cereals stood at Rs. 111,062.37 Crore / 13,857.95 USD Millions during the year 2022-23.

Nutritive value of different types of millets

Sorghum

Sorghum is best used for the replacement of wheat for making of bread, pasta, cookies, etc. East African people has used brew a drink from sorghum millets known as a ajono. Sorghum contains iron, calcium fiber, protein and wax policosanols which help to reducing

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cholesterol level and other health benefits. Sorghum has gluten free grain to prefer for celiac person or who cannot tolerate wheat based products O.S.K. Reddy, (2017).

Finger millet

Finger millet is considered one of the most nutritious cereals. Finger millet contains about 5–8% protein, 1–2% ether extractives, 65–75% carbohydrates, 15–20% dietary fiber and 2.5–3.5% minerals. Of all the cereals and millets, finger millet has the highest amount of calcium (344 mg%) and potassium (408 mg%). The cereal has low fat content (1.3%) and contains mainly unsaturated fat. 100 grams of Finger millet has roughly on an average of 336 K Cal of energy in them.

Pearl millet

t is a good source of fat, magnesium and insoluble fiber. Its flour has poor keeping quality, off flavour and nutty taste due to lipase enzyme but it helps in reducing respiratory disease, migraine and gall stones. Pearl millet contains insoluble fiber which helps in reduction of excessive bile system who leads gallstones Shweta, (2015).

Foxtail millet

It is also called Italian millet and German millet. It is growing both tropics and temperate region under low rainfall. Foxtail millet helps in preventing diabetes to reducing glucose level in blood and maintains the heart due to magnesium content O.S.K Reddy (2017).

Little millet

It is called a little but not less than its nutritional value and it contains vitamin, minerals and essential fatty acid to the body. Little millet is ideal use of pongal or kheer instead of rice and helps in preventing obesity due to its high fiber content O.S.K Reddy, (2017).

Production and consumption

Millets yield decrease from 68.4 million hectares in 1974, 43.4 million hectares in 1980 and 37.6 million in 1997-98. The average of millets in India is about 7.9 quintal per hectare. The enhanced yield of millets was around 82% in finger millet, 95% in little millet, 83% in kodo millet, 43% in foxtail millet, 76% in porso millet and 82% in barnyard millet due to use of new recommended technology. In India millets are produced in about 21 states, Karnataka, Tamil Nadu, Andhra Pradesh, Kerala, Hyderabad, Telangana, Uttarakhand, Jharkhand, and Madhya Pradesh, Karnataka state is a major producer of millets and 58 percent the global production of millets (Upadhayaya *et al.*, 2007). Millets have very important role in Indian

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foods. According to NSSO Unit the consumption pattern of small millets and finer millets was examined. The small millets consumption pattern was highest in Assam 18.82 Kg/ha/M and 18.6 Kg/ha/M states. Madhya Pradesh has highest area of small millets 32.4% after that 19.5%, Uttrakhand 8%, Maharastra 7.8%, Gujrat 5.3% and 3.9% Tamil Nadu. The productivity has highest as 1174Kg/ha in Uttarakhand followed by 1067/Kg/ha Tamil Nadu and 1056 kg/ha in Gujrat (Anbukkani *et al*. 2017).

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